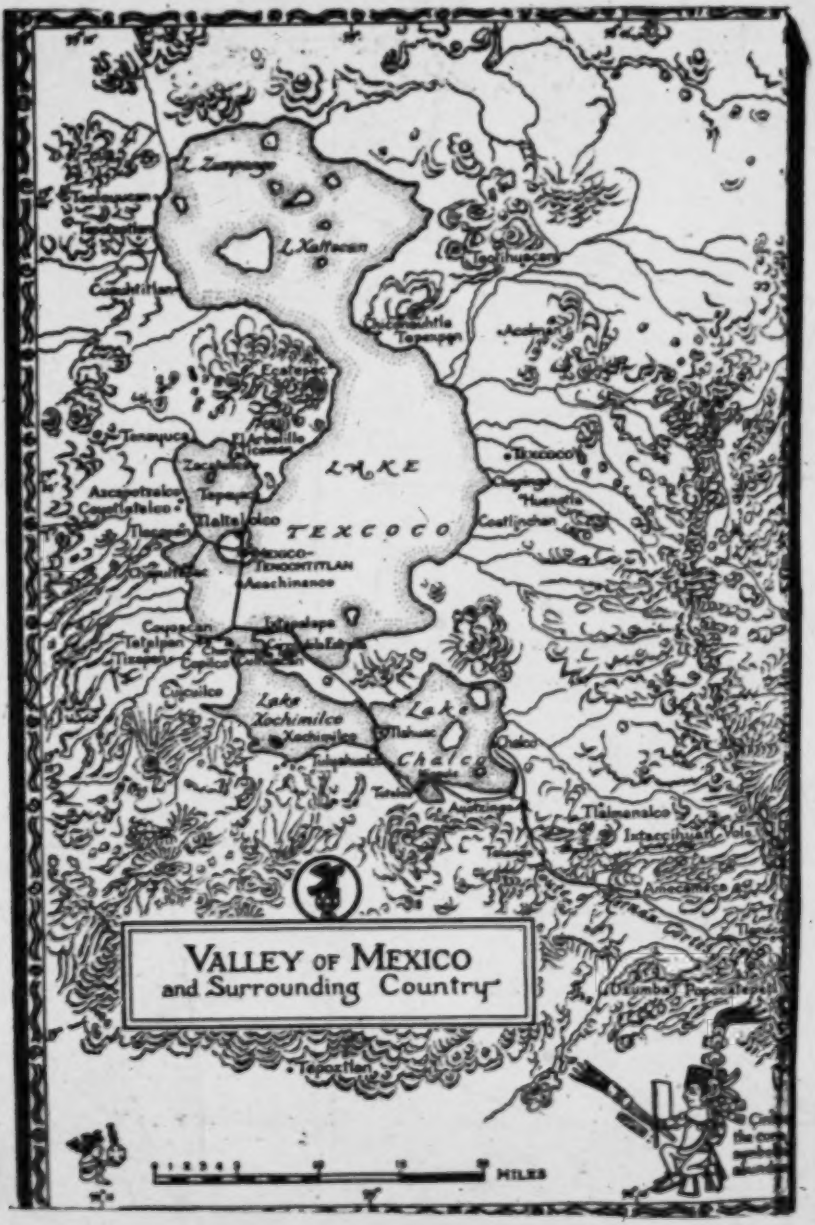
1:Vaillant A-5 (1928-1936)1941 NU7 Aztec NU7

131
133



[END PAPER MAP(A)]

1:Vaillant A-5 (1928-1936)1941 NU7 Aztec NU7

131
133
776
101

CENTRAL MEXICO
Archaeological Sites
Center Design:-
the Gods of the Five Directions
from Codex Vaticanus B
GULF OF MEXICO
PACIFIC OCEAN
Tropic of Cancer
Mexico City
Puebla
Vera Cruz
Tampico
Acapulco
Oaxaca
Tehuantepec
Guatemala
Yucatan
Chichen Itza
Uxmal
Palenque
Tikal
Copan
Quirigua
Tenochtitlan
Cholula
Tula
Teotihuacan
Monte Alban
Mitla
Xochicalco
Tarascan
Zapotec
Maya
Toltec
Aztec
Mixtec
Olmec
Totonac
Huastec
Tarahumara
Yaqui
Mayo
Seri
Pima
Papago
Apache
Navaho
Hopi
Zuni
Pueblo
Chichimec
Tlaxcala
Texcoco
Tlacopan
Chalco
Xochimilco
Cuernavaca
Tlatelolco
Tenochtitlan
Tepanec
Acolhuacan
Tlaxcalteca
Huexotzinco
Cholula

8: Barlow E-4 (no date)1949 NU7 Aztec NU7

632 [114] 131 *Anecuilco* (near Çeuctla) is added on the authority of the sixteenth-century relación of this and of the following town. (These two are included in the province of Çihuatlan somewhat arbitrarily, in the interest of symmetrical disposition.) Anecuilco and its companion Citlaltomaua "tributaban al rrey que era de Mexico que se llamava Mónteçuma."[a] It lay behind the high mountains east of Citlaltomaua [491] (whose location is considered below), eight leagues of "muy mal [133] camino ... de muchas bueltas" distant.[b] The river upon which it was situated sprang from the sierra of Tlacatepetl, taking the name of Xiquipila in its lower reaches from another pueblo on its banks, and emptying in the southeast into the "playa y boca que dizen de Nagualan." A tributary of this river was called the Nexatl.[c] All of these names save that of the sierra Tlacatepetl have disappeared. However, since Citlaltomaua lay on the Río Coyuca (as appears below), this other river springing from the Tlacatepetl must be the present Río Papagallo. The Río Sabana, which is the only other possibility, has a source nearer the coast than the sierra mentioned. The rest of Anecuilco's location depends on that of Citlaltomaua.

Apancalecan may be either the Atenchancaleca of Gaspar Xuarez,[d] two leagues from "the Villa" (Zacatula), or Echancaleca (No. 863 of the same document), one league from the Villa. (All three names [103] mean "Place of the Owners of Houses by the Sea.") In any case, like [101] Zacatula, it appears too far east on the accompanying map.

Citlaltomaua was eight leagues from the sea, seven from Coyuca [491] de Benítez (d) and seventeen "leguas de muy malos caminos de Acapulco, azia el sueste." It lay to the south of the high and broken mountains of the Tlacatepetl. Two leagues below it a river was formed which emptied "en la mar del sur en la playa que dizen de Coyuca." An estancia of Citlaltomaua, the only one of these names (except for the sierra of Tlacatepetl) which can be found today, lay about "una legua hazia el nascimiento del sol." This was called Tepetiztla (c)[e] and appears as "Tepetixtla" on some maps today, others giving it as "Tepetlixpa."

[a] *PNE*, 6: 158.
[b] *PNE*, 6: 165.
[c] *PNE*, 6: 160.
[d] *PNE*, 1: No. 854.
[e] *PNE*, 6: 159–159.

8: Barlow E-4 (no date)1949 NU7 Aztec NU7

REMARKS ON TOWNS

632 An extensive zone to the south of Lake Chalco is rendered uninhabit-
[133 able by the lava flow, or "Pedregal," emitted by the Ajusco Mountains,
311] which form the valley rim. If any small settlements existed in this area, their tribute was probably reckoned as a part of that collected from some major town in the region of Xochimilco or Tepoztlan.

Auchpanco is identified by Acosta with Ayapango.

Colhuacucinco,[8] later San Cristobal, lay on the shore of Lake Xaltocan, east of Tzonpanco (2).

Olac is a barrio of Xochimilco.[9]

632 *Petlacalcatl* is the inscription under the glyph of a house made of
114 grass mats, in the *Mendocino*. It occupies the usual place of the cabecera in the manuscript, and like all the other towns was originally followed by the word "pu[ebl]o." A later hand has struck this out and has replaced it with the word "gobernador," perhaps under the influence of the double (and doubtful) annotation about "Acolhuacā" and "Acolmecatl calpixqui" (tribute collector) which heads Acolhuacan Province.

That something is wrong is evident from the form of the original annotation. It is probably a place glyph, but the annotation takes the form of a personal glyph. I have chosen to read it as Petlacal*co*. The result is the same, for the Petlacalcatl, on the facing *Mendocino* page, was a head tribute collector, and the Petlacalco[10] was the "audiencia" building in the Tenochtitlan palace, which also housed a majordomo in charge of the granaries.[11]

632 *Texcacoac*[12] is a barrio of Tepotzotlan, and consequently we should judge that it lay north of Tecoloapan (7).

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[8] Located after the printing of the map, "dista del pueblo de Tiçayuca vna legua hazia el oueste" (*PNE*, 3: 44 and n. 2).

[9] Olaguibel, *Onomatología del estado de México* (1894), p. 96.

[10] Sahagún, *Historia general de las cosas de Nueva España* [1938], I: 166.

[11] *Ibid.*, II: 311.

[12] Located after the printing of the map; it is mentioned in the Ayer "Fragment of a Village Book," and, as Texcacoa, in García Cubas' *Diccionario*.

10:Deevey N-4 (no date)1957 NU7 Aztec NU7

823 neighbors demonstrated practical control over the lacustrine as well as other components of their environment.

127 At the time of the Conquest, according to extensive researches summarized by Orozco y Berra (1864), Maudslay (1908, 1910, in the 2nd 133 and 3rd volumes of the Hakluyt Society edition of Bernal Diaz del Castillo), and especially by Schilling (1939) and Linné (1948), the Valley lakes were more or less one continuous sheet of water. Schilling's series of sketch maps is reproduced in Figure 1. Cortés, in his second [312] letter to Charles V (MacNutt edition, 1908, vol. 1), speaks of two lakes, because Lake Texcoco, the lowest-lying and most saline body of water, was separated from the freshwater portions by a great dike, the *albarradón* of Nezahualcóyotl. The Valley lakes of course were without outlet to the sea, and the drainage operations that began in the late 16th century and were made effective only in 1900 were devoted to the northward diversion of Lake Zumpango, regarded as the source of the most dangerous floods, to the Río Tula. The 16th-century historians believed that Texcoco had a subterranean outlet to the sea by way of a spring in the valley of Tula. Pomar (García Icazbalceta's edition, 1891, [782] p. 58) claimed to have seen it, while Sahagún (Robredo edition, vol. 3, p. 298) described the "whirlpool" in the center of the lake as the scene where small boys were sacrificed every year. It is reasonable to suppose that the legend of the outlet was believed by the acculturated Indians, but it does not follow that the educated Aztecs believed it.

127 The "Lake of Mexico" of the historical sources is usually the fresh-
133 water part that surrounded the Aztec capital, Tenochtitlán. This part is
312 now dry, as is the southernmost lake of Chalco. Dikes that served as causeways connected Tenochtitlán with the mainland, but the most important dike from the hydrographic standpoint was that of Nezahualcóyotl, which lay to the east of the city. According to tradition, the dike was built by the king of Texcoco in 1446, during the reign of Montezuma I. It was 16 km long, and required the labor of 20,000 men. The reason given for its construction was to protect the Aztec capital from floods, though it is not clear why a Texcocan king should have contributed so generously to his rival's advantage. Of the advan- [241] tage, however, there can be no doubt. All of the southern valley floor, from Chalco to Tenochtitlán, was doubtless covered with *chinampas*, 127 the artificial islands that have been called "floating gardens" since the 133 days of the imaginative 18th century historian Clavijero. Floods along 731 the course of this drainage would on the whole have been beneficial, though inconvenient; the real danger threatened from the Texcoco side, whence salt water, driven by freshets or seiches[1] might disastrously drown the *chinampas*. Freshets, that brought large river fish through

[1] [i.e., an oscillation of the surface of a lake lasting from a few minutes to several hours, thought to be due to inequalities of atmospheric pressure.—Analyst]

10:Deevey N-4 (no date)1957 NU7 Aztec NU7

133

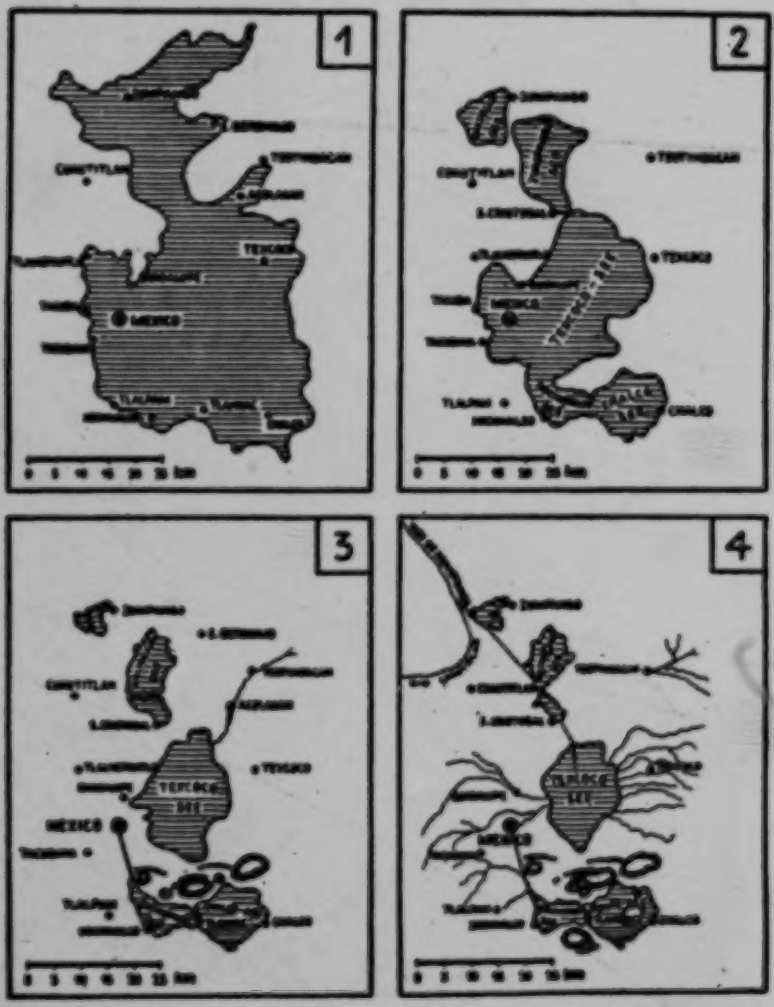

Fig. 1. Sketch maps of the lakes of the Valley of Mexico, (1) during the Ice Age, (2) at the beginning of the 16th century, (3) at the beginning of the 19th century, (4) in 1889. Reproduced from Schilling (1939).

the salt lake from the streams on the eastern side of the Valley, were described by Motolinía in 1540 (Steck edition 1951, p. 263). That seiches also occurred may be inferred from Cortés' reference to "tides" (MacNutt edition, 1908, vol. 1, p. 256). Moreover, Sahagún records in Book Eight a tradition, regarded later as an omen of the coming of the Spaniards, to the effect that "the water of the lake foamed up, and

127 133 731

10:Deevey N-4 (no date)1957 NU7 Aztec NU7

the wind did not stir it up. It was as welled up .... and it reached the lower parts of the houses" (1954 edition, p. 18). There appear to be no modern observations of seiches, but the extraordinary Gómara remarks (1940 edition, pp. 195–196) that "the salte water ebbeth and floweth, accordyng to the wynde that bloweth".

Whether irrigation was practiced in Middle America is a question that has never been adequately considered (Millon, 1954; Palerm, 1955). Clearly it would not have been necessary in Aztec times in the Valley of Mexico; *chinampa* agriculture, which substituted for irrigation, has an ancient history in the Valley (Apenes, 1943), but it is not known elsewhere nearer than the Vale of Kashmir (West and Armillas, 1950). At other times and in other places it seems certain that the dense population could not have been maintained without irrigation. The great ceremonial center of Teotihuacán lies in a subdivision of the Valley that receives less precipitation than Mexico City, and some irrigation is practiced there today. We know from the work of Apenes (1943) and Sears (1952) that just prior to Teotihuacán times (about 500 B. C.) the Valley lakes were appreciably lower than today, and the conclusion is inescapable that Teotihuacán culture was founded on high ground and flourished during a dry time when irrigation must have been essential. Deforestation (Vaillant, 1941) complicates the hydrographic picture for Teotihuacán times but it is evident that the rise and spread of Aztec culture was related to increased moisture, reflected in high lake levels during the 14th to 16th centuries. The high levels would doubtless have continued through the 18th century, in agreement with climatic oscillations elsewhere, if sporadic attempts to drain the Valley had not been partially successful in the early 17th century (they were not completely successful until 1900).

Aztec control of hydrography, then, did not include irrigation where it was unnecessary, but was devoted, in the last centuries before the Conquest, to regulating the levels of the lakes. Before the Aztecs entered the Valley, however, they lived in many places, not all of which were lacustrine. So far archaeology has made little progress in reconstructing the details of their history during the migration period. The problem is exceedingly complicated, and four centuries of scholarship have not made it less so. The Aztecs were interested in their own history, and attempted to draw it together in pictorial manuscripts. These have been lost, and what have come down to us are copies, made, probably from memory, by hispanicized Indians under the prodding of the 16th-century friars. In the interpretation and verbalization of these pictorial histories we have to contend with ideas implanted by the friars, and the result is a picture of the migration period that is strongly reminiscent of the wandering of the Israelites, joined to a

10:Deevey N-4 (no date)1957 NU7 Aztec NU7

self? Tell them that I will take vengeance before tomorrow and that they should not dare to give advice about matters which are for me to determine. Let them know that all they have to do is to obey'. Having said this, those who saw assert that the idol looked so ugly and frightful, that all were terrified and frightened. On that very night, it is said, when everything was quiet, a loud noise was heard in part of the camp and when the people rushed there in the morning, they found that all those who had spoken in favor of remaining in this place were dead with their breasts torn open and their hearts torn out. In this way it was that they were taught that most cruel of sacrifices, a custom they always practiced after that, which consisted of cutting open a man's chest in order to tear out his heart and offer it to their idols. (The reason they did that) they claimed was because (their god) ate only hearts.

"Having thus punished them, Huitzilopochtli ordered his priests to tear down the dykes and repairs they had made when they deflected the course of the water to form the lagoon and instructed them to make the river take its former bed. This they did, and the entire lagoon being thus emptied of water the place became as dry as it had been before. When the Mexicans, after some time, saw how sterile the place had become, and realized also that their god was incensed at them, they consulted him, raised their camp, and set out from the neighborhood of Tula in the year 1168 A. D."

– – Radin's translation, 1920, pp. 73–74.

This circumstantial account, alas, cannot be taken as showing that there was an artificial lake at Tula. The more operational suggestion that emerges is that Tula, as understood by Tovar's Aztec informants, was whatever place can be shown to have had an artificial lake. But even this suggestion is hardly worth following up, as the following argument implies.

The "pure" glyph for Tollán (Tula), as it occurs in the Codex Xólotl (Dibble 1951) and the Codex Mendoza (Clark, 1938) consists (Figure 3) of a row of cattails, *Typha* (identified as *Cyperus flavicomus* Michx. by Clark, whose botanical identifications are undocumented and not always reliable). In the *Tira de la peregrinación México* (Anonymous, 1944), commonly known outside Mexico as the Codex Boturini, we have an Aztec pictorial history that is somewhat more influenced by European draughtsmanship; it shows Tula (Figure 2) as cattails in a lake, accompanied by a large-scaled fish that looks remarkably like a carp. Tula is also shown in the pictures that accompany Tovar's *Relación* (the Codex Ramírez, Orozco y Berra's edition, 1944, Lam. II), which, like the text, represent a version of Diego Durán's

11:Diaz T,H-5 (1519-1520) 1910
NU7 Aztec NU7

THE VALLEY OF MEXICO.

Introductory Notes to Book VI.

133 THE Valley of Mexico is a level plain about 7424 feet above the sea, completely surrounded by mountains which leave no exit for the escape of the water from a fairly abundant rainfall, and as a consequence the whole valley at one period must have formed one vast lake, whose volume was limited only by soakage and the very rapid evaporation due to a tropical sun. At the time of the Conquest the area of the surface of the lakes was (very roughly) 442 square miles.

A red line on the map[1] marks the shape and size of this basin, taking as a limit the crests of the mountains and hills that surround it and the dividing line of the watershed; this includes about 3110 square miles.

The mountains surrounding the valley may be roughly divided into three ranges. To the East the Sierra Nevada, with the great peaks of Popocatepetl (17,887 ft.) and Ixtaccihuatl (17,342 ft.) capped with perpetual snow, and the three lower peaks to the North, Papayo, Telapon and Tlaloc; to the South lies the great volcanic barrier of Ajusco, to the West the range of Las Cruces, and to the North that of Pachuca. Towards the south part of the valley the intrusion of the low volcanic cones of Chimalhuacan, Santa Catarina, la Estrella and their neighbours, reduced the water surface between the lakes of Xochimilco and Texcoco to a narrow space, and, to the north of the valley, the northern end of the Sierra de Guadalupe and the volcano of Chiconahutla narrowed the water space between the lakes of Texcoco and Xaltocan. The rainfall appears to be more considerable on the western than on the eastern side of the lakes. The streams flowing into the lakes are of necessity short in their courses and mostly torrential, by far the most important being the Rio de Guatitlan on the North-west.

Although the lakes have received different names, the water surface must have been continuous until separated by the earth-works of the Indians. Starting from the North the lakes are named Zumpango, Xaltocan (the southern part was called San Cristóbal by the Spaniards), Texcoco, Xochimilco and Chalco.

Of this chain of lakes Texcoco lies lowest, and measurements made in recent years, after much of the water had been drained away, show the following heights above the level of Texcoco. To this list is also

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[1] Map No. 1.

[This map was not processed for the Aztec File.]

11:Diaz T,H-5 (1519-1520) 1910
NU7 Aztec NU7

133 appended the depths of the lakes as determined by the drainage commission of 1861.

Name.	Level above Texcoco in Metres.	Depth in Metres.
Texcoco	0.00 ...	0.50
Zumpango ...	6.06 ...	0.80
Xaltocan	3.47 ...	0.40
San Cristóbal ...	3.60 ...	0.60
Xochimilco ...	3.14 ...	2.40 to 3.00
Chalco	3.08 ...	2.40
City of Mexico ...	1.90 ...	—

Silt may have made a considerable difference to the level of the lakes during four hundred years, but no possible allowance for silt could alter the conclusion that at the time of the Conquest the lakes must have been very shallow.

241 The site of the City was originally, in all probability, two reed-
361 covered mud banks or islands, which may have been cultivated in much the same manner as were the *chinampas* or floating gardens at the time of the Conquest, or as the chinampas of Xochimilco are at the present day, and these two islands became respectively the sites of the towns of Tlatelolco and Tenochtitlan, and the space between them was eventually reduced to a rather broad canal.

361 Islands in lakes, or rocky knolls on the land surrounded by deep barrancas or gulches, were frequently chosen by the Indians tribes as sites for towns on account of the facility for defence, and the number of such sites in Mexico and Central America[1] still either occupied by towns or containing the ruins of ancient buildings are evidence of a continual state of intertribal warfare.

241 The chinampas were formed by heaping up the soft mud from the lake on to wattles in order to form seed beds for flowers and vegetables, and these floating gardens gradually increased in size and became more compact from the growth of the interlacing roots of the willows and other water-loving plants until they may have supported a small hut for the owner and his family, and the lengthening roots eventually anchored them on the shallow margin of the lake. Two large groups of such gardens are shown on the map published in Clavigero's *History of Mexico* lying off

[1] Cf. Mixquic, Tlahuac and Xochimilco in the lakes of Mexico, Tayasal in the lake of Peten, and the island homes of the Lacandones in Guatemala. Towns almost surrounded by barrancas are Cuernavaca and Yacapistla in Mexico, and Utatlan and Iximché, etc., in Guatemala. It is as well to note here that such sites were not chosen for cities of the older culture such as Teotihuacan, Cholula, Mitla, Palenque, Copan, etc.

11:Diaz T,H-5 (1519-1520) 1910
NU7 Aztec NU7

and crowned with a strong wall of rubble masonry, and was protected on both sides by a strong stockade which broke the force of the waves.

"The dyke divided the lake into two parts, the larger to the East was known as the Lake of Texcoco, from the city situated on its shores, the lesser to the West was called the Lake of Mexico because the capital was surrounded by its waters on all sides. From this arrangement Mexico derived an aggregate of inestimable benefits. The great lake, like all lakes having no outlet for their waters, was salt, notwithstanding the volume of all the rivers which flowed into it, or in fact it owed its saltness to this very flow which carried in its current the soluble salts which the falling rain has robbed from the land. The salt water saturating the soil has little by little rendered it sterile, and in addition, the carbonate of soda and the thousand other impurities with which it is charged are hostile to animal life to such an extent that fishes could not live in it, neither to-day nor at the time of the Conquest, as was stated by the writers at that epoch, although the water was then less salt than it is at the present. As the lakes of fresh water to the south poured their surplus water into the lake of Mexico through the narrows of Culhuacan and Mexicaltzingo, those waters spread through the western lake, the Lake of Mexico, and completely filled it, separated as it was from the salt lake by the dyke of Netzahualcoyotl. In this way the basin of fresh water was converted into a fish pond and a home for all sorts of aquatic fowl. Chinampas covered its surface, separated by limpid spaces which were furrowed by swift canoes, and all the suburbs of this enchanting capital became flowery orchards."[1]

It will be noticed in the Upsala map that within the dyke men are depicted catching fish, while no fishermen are shown in the Lake of Texcoco, which was, however, then, as it is now, the home of numberless wild fowl. The great dyke was provided with numerous openings for the passage of canoes, but these openings were furnished with sluice gates which could be closed during the rainy season when the water of Texcoco rose and threatened to flood the City, and could be opened again to let out the fresh water from Mexico when the rapid evaporation during the summer months had lowered the level of Texcoco.

The fluctuations of level in the lakes of Chalco and Xochimilco were probably always less than in Lake Texcoco owing to the great number of copious springs of beautifully clear water which well up around their margins, especially on the west side, as well as in the lake of Xochimilco itself.

[1] Francisco de Garay, *El valle de Mexico, apuntes históricos sobre su hidrographia*, pp. 13 & 14.

11:Diaz T,H-5 (1519-1520) 1910
NU7 Aztec NU7

Such springs were also to be seen in and around the Lake of Mexico, but not in such considerable numbers, and there must also have been one or more on the site of the City which supplied its earliest inhabitants with drinking water, although in later Indian times the supply was brought in an aqueduct from a fine spring near Chapultepec.

"The population of Tenochtitlan (the City of Mexico) at the time of the conquest is variously stated. No contemporary writer estimates it at less than sixty thousand houses, which by the ordinary rules of reckoning would give three hundred thousand souls. If a dwelling often contained, as it asserted, several families, it would swell the amount considerably higher."[1]

The supply of food for such a population must have been a matter of no little difficulty, for the soil on the hill-sides is scanty, many of the slopes are composed of *tepetatle*, a mixture of volcanic ash and scoria fit only for growing maguey,[2] and considerable surfaces are covered with lava and carry no loam at all. The scarcity of good soil must have led to an intensive cultivation, and this is also shown by the care with which manure was collected,[3] as is the case in China and Japan to-day.

Food must have been brought from very considerable distances, and the want of a sufficient supply from the near neighbourhood must have had much to do with the predatory nature of the Aztec dominion.

Note on the Drainage.

From the time of the Spanish settlement the security of the city from floods and the drainage of the valley became the preoccupation of the Spanish Viceroys. After a severe inundation in 1555, Don Luis de Velasco replaced the Albarradon of Netzahualcoyotl, which had fallen into decay, by a similar and shorter dyke somewhat nearer the city. At the beginning of the seventeenth century a French engineer, Henri Martin, known in Mexico as Enrico Martínez, planned a system of drainage and a cutting (known as the *tajo de Nochistongo*) through the mountain rim to the north-east of the valley, but this work was only partly carried out during the following years and was not completed until the end of the eighteenth century.

The flood of 1865 again brought the question of drainage into prominence, and new works, including a large canal and a large tunnel, were commenced and brought to a satisfactory conclusion in the year 1900.

The lakes of Zaltocan and Zumpango are now almost dry during the summer months. The Lake of Chalco has been drained dry,

[1] Prescott, *Conquest of Mexico*.
[2] The American aloe, *Agave americana*, from which pulque is made.
[3] Text page 72.